

## Designation of a Neotype for *Protobothrops mangshanensis* (Zhao, 1990)

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**Abstract** *Protobothrops mangshanensis* (Zhao, 1990) was first described based on the specimens from Mt. Mang, Yizhang, Hunan, China (Zhao and Chen, 1990). However, due to poor preservation, the holotype of *P. mangshanensis* is considerably damaged and cannot presently be used. Thus, according to Article 75 of the International Code of Zoological Nomenclature (1985), we designate a neotype for this species.

**Keywords** snake, Viperidae, *Protobothrops*, neotype

*Protobothrops mangshanensis* (Zhao, 1990) was first described based on the specimens from Mt. Mang, Yizhang, Hunan, China (Zhao and Chen, 1990). This species was originally described under the genus *Trimeresurus* (*sensu lato*). Based on comparison of skulls of this species with others, Zhang (1993) erected a new genus *Ermia* and placed the species under this genus as *E. mangshanensis*. However, the name for the genus *Ermia* was already in use for a genus of locusts (Gumprecht and Tillack, 2004). Thus, Gumprecht and Tillack (2004) proposed a new replacement name for *E. mangshanensis*, that is, *Zhaoermia mangshanensis*. More recently, Guo *et al.* (2007) transferred the species to the genus *Protobothrops*, based on the evidence that *Z. mangshanensis* is phylogenetically nested within the existing species of that genus. The species is, therefore, currently known as *Protobothrops mangshanensis*, and it is listed as Endangered under the Red List of IUCN (<http://www.iucnredlist.org>).

Due to previous poor preservation, the holotype of *P. mangshanensis* (CIB 8901) is considerably damaged (the skull was removed) and cannot be used as the holotype at present. According to Article 75 of the International Code

of Zoological Nomenclature (1985), it is necessary to designate a neotype for this species.

**Neotype of *Protobothrops mangshanensis*** (Figures 1, 2): CIB 098485, a juvenile male was collected from Pingkeng in Mt. Mang, Yizhang, Hunan, China (the same as the original type locality) in 2012. Total body length 370 mm (snout-ventral length: 310 mm; tail length: 60 mm); ventral scales 196 and subcaudals 58 pairs; head triangular in appearance, 20.05 mm in length (between the tip of snout to the posterior edge of lower jawbone) and 11.49 mm in width (the widest points at the rear of the jaws); top of the head covered with many small scales, of which the supraoculars are the largest; supraocular scales are separated by a minimum of 7 scales, while 8 and 11 scales are present between anterior and posterior edges; the right supraocular 3.31 mm in length and 2.28 mm in width; the rostral scale large and roughly inverted triangular in shape, just visible from above; two internasals in contact with each other and with the rostral scale; supralabials 8, with the 1<sup>st</sup> one being relatively large and contacting the nasal, the 2<sup>nd</sup> smaller; the 3<sup>rd</sup> largest and highest (0.28 mm in height and 0.40 mm in width), and separated from the orbit by one curved and elongated postocular; 3 preoculars and 2 postoculars present; 6 scales directly bordering the supraocular scales, the 2<sup>nd</sup> and 3<sup>rd</sup> preoculars forming the upper, lower and posterior borders of the orbit; the 1<sup>st</sup> postocular relatively small, the 2<sup>nd</sup> postocular elongated and extending beyond

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**Figure 1** The general view of the neotype of *Protobothrops mangshanensis*. A: Dorsal view; B: Ventral view.



**Figure 2** The head of the neotype of *Protobothrops mangshanensis*. A: Dorsal view; B: Ventral view; C: Lateral view.

the orbit; sublabials 14/15, with the 1<sup>st</sup> one in contact with each other, and the first three in contact with the

chinshields; the mental an inverted triangle in shape; the chinshields greatly enlarged; dorsal scales 25–25–17 rows in formula; mid-body scales weakly keeled, except for the outermost row (at mid body) which are smooth, the scales on the head smooth, the body blackish brown, with a series of irregular yellow green patches or bands, which are lichen-like in appearance; these patches are generally at the anterior body and gradually change into bands at the posterior body; dorsal surface of head black with yellow reticulated bands; ventral surface of head consistent with dorsal surface, but with scattered yellow spots; the posterior half of the tail showing pale yellow or green; ventral body mostly dark with scattered yellow spots.

The neotype described here is consistent with the original description of the holotype (CIB 8901) in appearance and most scalation characteristics (Zhao and Chen, 1990).

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